



AIRSERVICES AUSTRALIA

ENVIRONMENT SERVICES BRANCH

Environmental Assessment of the

proposed amend procedures for

Runways 09 and 34 Melbourne Airport

**ARMS Numbers 147584, 143652,
143661 and 150045**

Report No. EO 06-162

January 2006

*Not a job a
one-off - not*

*The most facile, general
copy*

see

*Death by
a...*



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1 BACKGROUND

1.1 Environmental Obligations

Airservices Australia's environmental obligations relate principally to two pieces of legislation:

- *Environment Protection and Biodiversity Conservation Act 1999*
and
- Air Services Act 1995.

1.2 Environment Protection and Biodiversity Conservation Act

Under this Act, Airservices Australia is required to examine any proposal, take into account its environmental implications, and assess whether there are environmental impacts that are significant.

If, after examining a proposal, the implications of the proposal are considered environmentally significant, then in accordance with the Act, a proponent for the proposal must be formally designated and the Minister for the Environment advised. The Minister then determines what further action is appropriate.

1.3 The Air Services Act

Under this Act, Airservices Australia has two environmental functions. Under Section 8(1)(d) of the Act, it must carry out activities to protect the environment from the effects of, and the effects associated with, the operation of Commonwealth jurisdiction aircraft. Under Section 9(2) of the Act, Airservices' should endeavour to perform its functions in a manner that ensures, as far as is practicable, that the environment is protected from the effects of, and the effects associated with the operation of aircraft. Section 77(2)(f) also has provision for the Governor-General to make regulations in respect of the environmental effect of the operation of Commonwealth jurisdiction aircraft.

1.4 Safety Obligations

While the Air Services Act places a strong emphasis on Airservices' environmental obligations, it also makes it clear in Sections 9(1) and 9(2) that environmental considerations should in no way compromise safety requirements.

1.5 The Environmental Assessment

As required by the provisions of the Environment Protection and Biodiversity Conservation Act 1999, and the Air Services Act 1995, Environment Services Branch has undertaken an environmental assessment of the proposed amendments to the Standard Arrival Routes (STARS) at Melbourne Airport.



2 INTRODUCTION

An environmental assessment has been undertaken of the proposed amendments to the STARs at Melbourne Airport. This assessment utilised the Environmental Services Branch Screening Process to establish whether a full environmental assessment is required under the EPBC Act.

3 BRIEF DESCRIPTION OF THE PROPOSAL

Details of the proposed changes to existing Melbourne Airport STAR procedures are described in Airservices Australia's Risk Management database (ARMS) as entries 143652, 143661, 147584 and 150045 (see Attachment A).

The proposal is to –

- Runway 34 VOR – amended procedure
- Runway 34 RNAV (GNSS) – amended procedure
- Runway 09 RNAV (GNSS) – new procedure
- ARBEY Two Star Runway 34 – amended procedure
- DYTES One Star Runway 34 – new procedure
- HOBAY Four Star Runway 34 – amended procedure
- MICHM Two Star Runway 34 – amended procedure
- WENDY Eight Star Runway 34 – amended procedure

A detailed description of the proposed amendments is included in the analysis of each procedure.

4 METHODOLOGY

The current approach procedures were mapped using a proprietary mapping application to indicate their flight paths.

The proposed STAR procedures were mapped to indicate their estimated flight paths and to provide a comparison with the current procedures.

Using Airservices Australia Noise and Flight Path Monitoring System (NFPMS), flight track plots of aircraft arrivals to Melbourne Airport were obtained for the period 1 to 31 January 2005. An analysis of the tracks of the current approaches was completed.

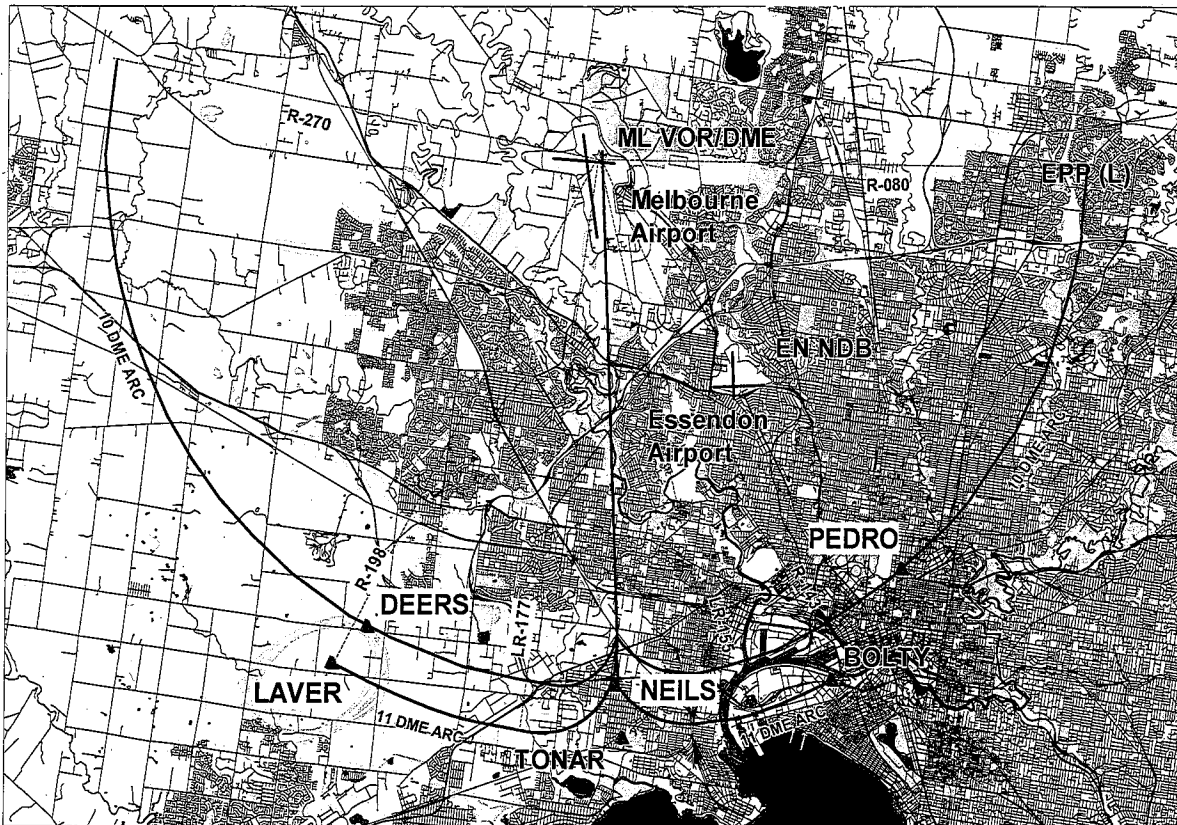


5 RUNWAY 34 VOR APPROACH

The proposal is to amend the Runway 34 VOR approach to make the initial approach points for the VOR approach coincident with the STAR termination for Runway 34 and the RNAV (GNSS) approach.

Figure 1 depicts the current VOR approach in green and the proposed VOR approach in red.

Figure 1



The amended procedure has –

- reduced the distance of both of the DME arcs
- moved the DME arc from 10 DME to 11 DME

Figure 2 overlays the flight paths of aircraft using Melbourne Runway 34 during the month of January 2005 over the proposed VOR approach.

Figure 2 shows that a large number of aircraft use the current VOR approach. In the proposed approach, these aircraft will be flying one (1) nautical mile south of the current flight path.



Figure 2

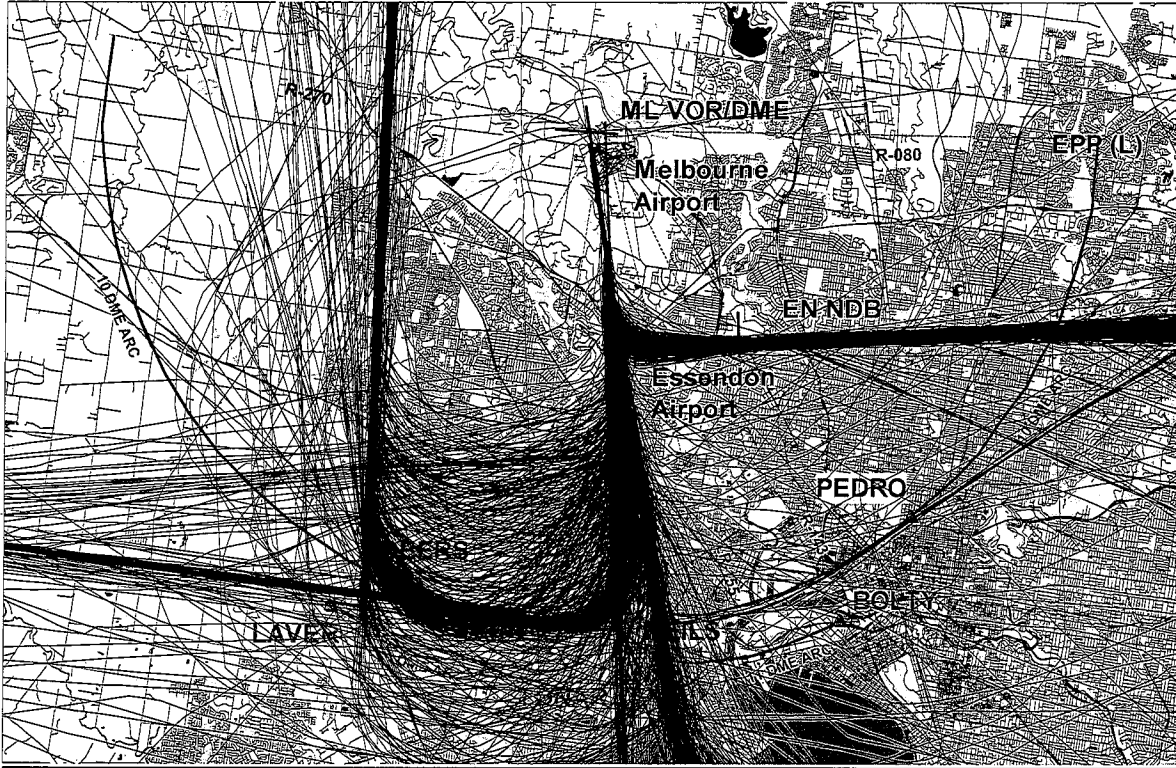


Figure 2 shows that there is considerable variation in actual tracks over the ground by aircraft approaching Runway 34 and that the residential areas under the proposed VOR approach are already impacted by aircraft operations. However, the residential areas under the proposed approach will experience a considerable increase in aircraft movements. It is assessed that this will be noticed by some people.

Yes, more aircraft over the residential areas in 1976. - no reduction of VOR flight paths already done!

While the proposed VOR approach for Runway 34 will result in some change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed amended VOR approach to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

no community concern at all



6 RUNWAY 34 RNAV (GNSS) APPROACH

The proposal is to amend the Runway 34 RNAV (GNSS) approach to make the initial approach points for the RNAV (GNSS) approach coincident with the STAR termination for Runway 34 and VOR approach.

Figure 3 depicts the current RNAV (GNSS) approach in green and the proposed RNAV (GNSS) approach in red.

Figure 3

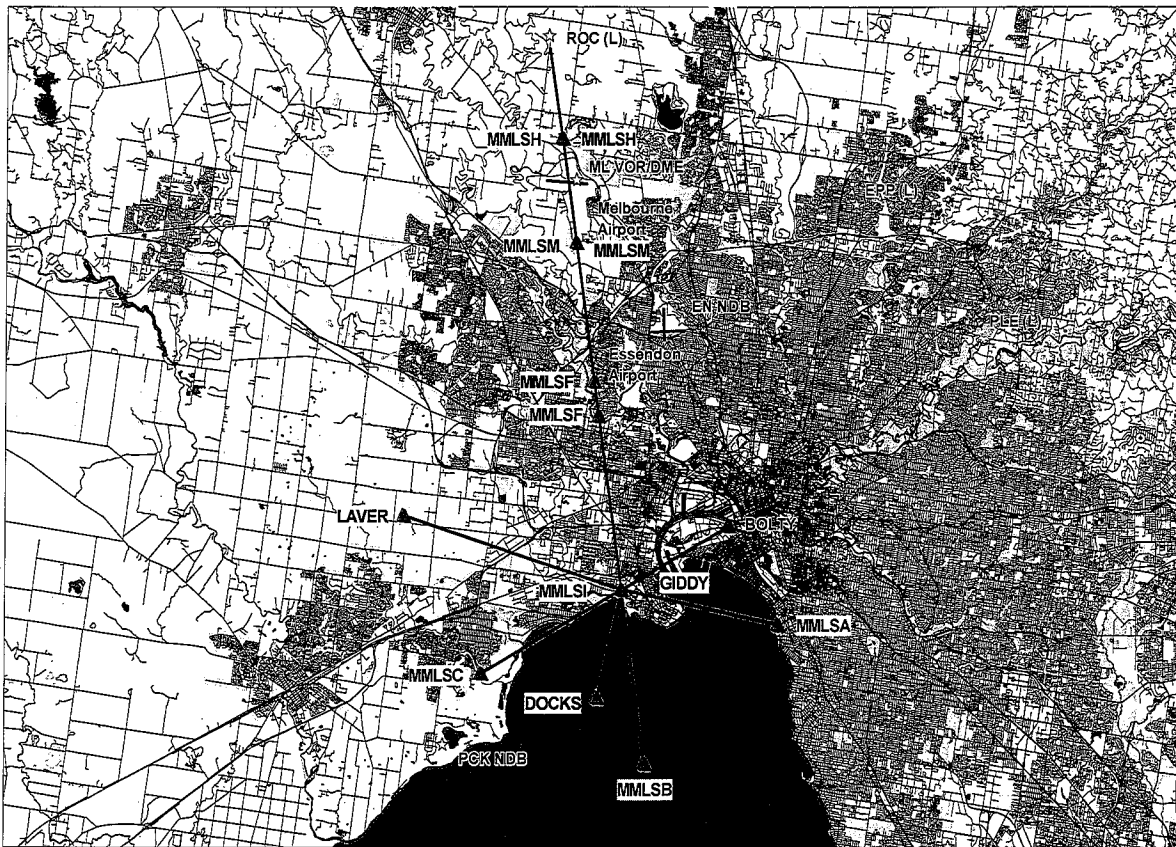


Figure 4 overlays the flight paths of aircraft using Melbourne Runway 34 during the month of January 2005 over the proposed RNAV (GNSS) approach.

Figure 4 shows that in the proposed RNAV approach the tracks -

- LAYER to MMLSI/GIDDY – the residential areas under this track are already impacted by aircraft operations
- DOCKS / MMLSA to MMLSI/GIDDY – the residential areas under this track are already impacted by aircraft operations
- BOLTY to MMLSI/GIDDY – some of the residential areas under this track are already impacted by aircraft operations

Handwritten note: they get a few so they won't make a noise!

Figure 4

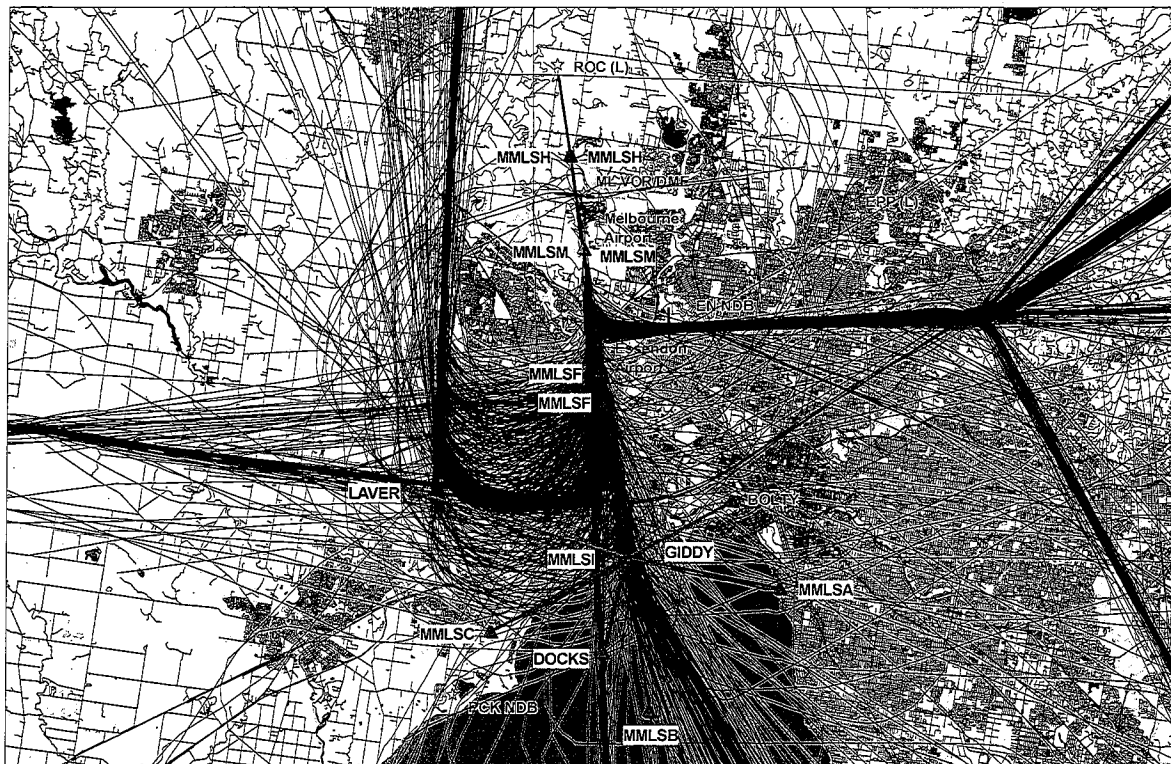


Figure 4 shows that there is considerable variation in actual tracks over the ground by aircraft approaching Runway 34 and that the majority of the residential areas under the proposed RNAV approach are already impacted by aircraft operations.

However, the residential areas under the proposed track BOLTY to MMLSI/GIDDY will experience a considerable increase in aircraft movements. It is assessed that this will be noticed by some people.

While the proposed RNAV approach for Runway 34 will result in some change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed amended RNAV (GNSS) approach to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

7. RUNWAY 09 RNAV (GNSS) APPROACH PROCEDURE

In August 2004 Environment Services undertook an assessment of a proposed RNAV (GNSS) approach to Melbourne Runway 09.

The 2004 assessment showed that during the year 2003 the aircraft were flying the tracks depicted in Figures 5 and 6.

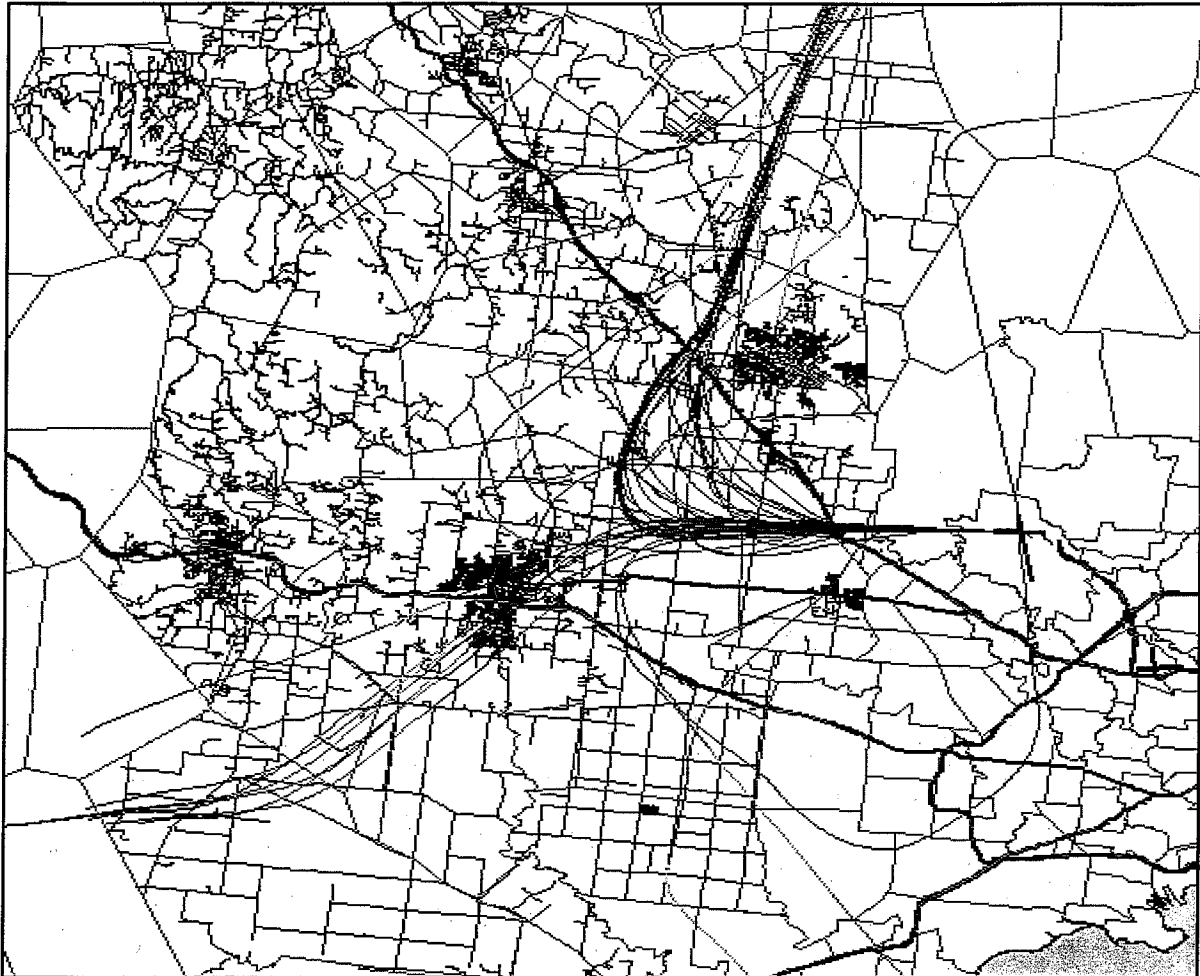
Figure 5



The 2004 assessment concluded that the proposed approach would change the flight paths depicted in Figures 15 and 16 and that there would be a noticeable change in the impact of aircraft approaching Runway 09. The assessment recommended ATC Melbourne investigate ways of minimizing the impact on Bacchus Marsh and minimizing the number of aircraft using Initial Waypoint MMLWG.



Figure 6



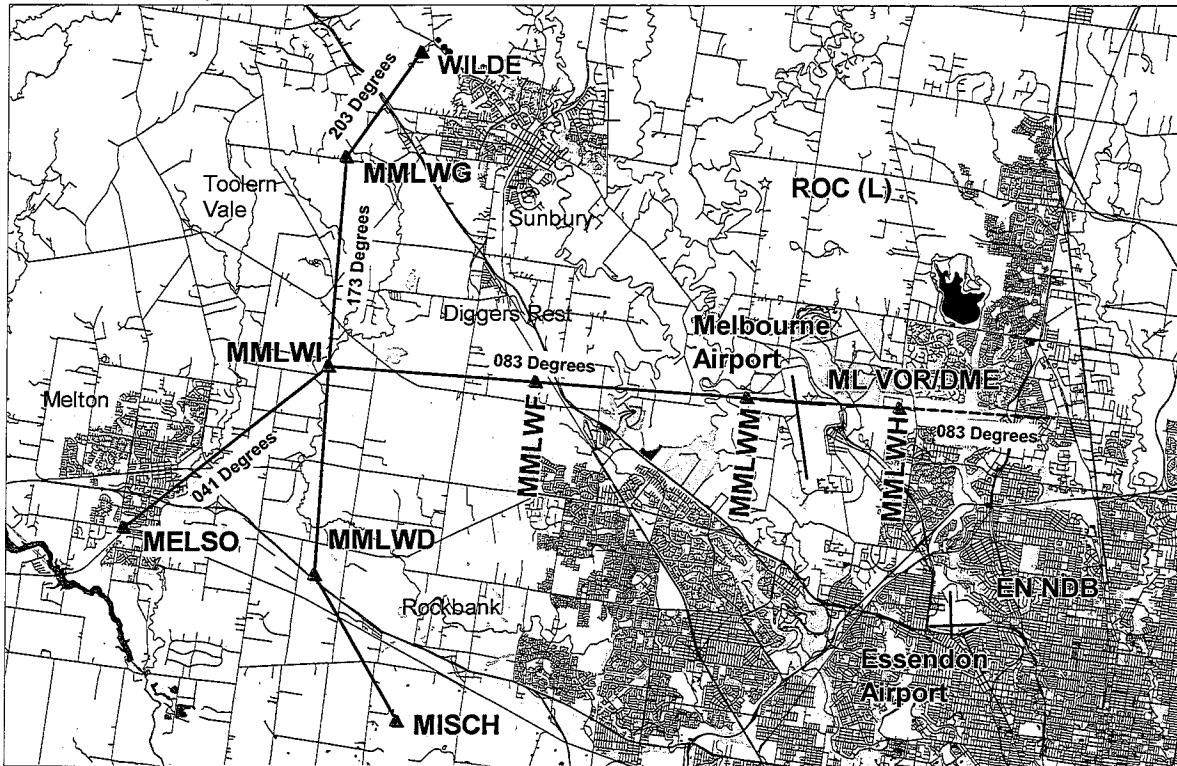
The proposed GPS approach procedure which is the subject of this assessment is a revised procedure after ATC Melbourne and Procedures Design have taken in to account Environment Services recommendations.

The attached proposed Runway 09 GPS approach requires –

- aircraft track to from the STAR to Initial Waypoints MMLWD, MMLWG or MELSO waypoint at not below 4000 feet
- after passing over waypoints MMLWD, MMLWG or MELSO aircraft track to Intermediate Waypoint MMLWI on descent to 3080FT
- after passing Intermediate Waypoint MMLWI the aircraft will be on final approach and will descend either for a landing or a missed approach (at Missed Approach Waypoint MMLWM and 890 feet).
- if a missed approach is required, the aircraft track to Missed Approach Holding Waypoint MMLWH climbing to 3000 feet (or as directed by ATC). After waypoint MMLWH aircraft track 083° (or as directed by ATC).

The proposed Runway 09 GPS approach is depicted in Figure 7.

Figure 7



Analysis of the proposed Runway 09 GPS Approach procedure found that the proposed tracks are approximately the same as the tracks of the current Runway 09 VOR/DME procedure. Figure 8 shows the proposed GPS approach in red and the current VOR/DME approach in blue.

Figures 9 and 10 depict the tracks of aircraft approaching Runway 09 during January 2005. Figure 9 is jet aircraft and Figure 10 is turboprop aircraft. It is noted that the flight paths in 2003 are very similar to the flights paths in January 2005.

Figures 9 and 10 show that the usage rate of Runway 09 during January 2005 was very low when compared to the other Melbourne aerodrome runways. ATC advise that Runway 09 is not the preferred runway for arrivals, therefore its usage rate is low all year round. This advice is confirmed by the low usage rate shown for the flights in 2003.

Figure 8

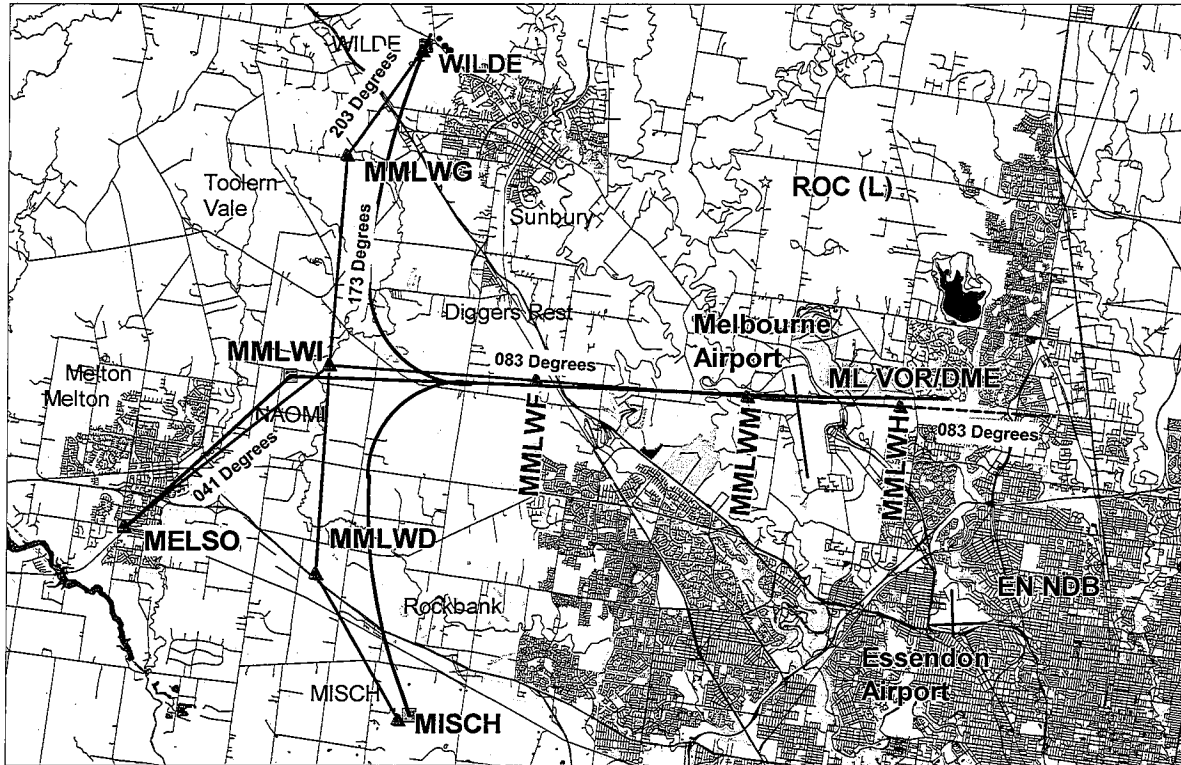


Figure 9

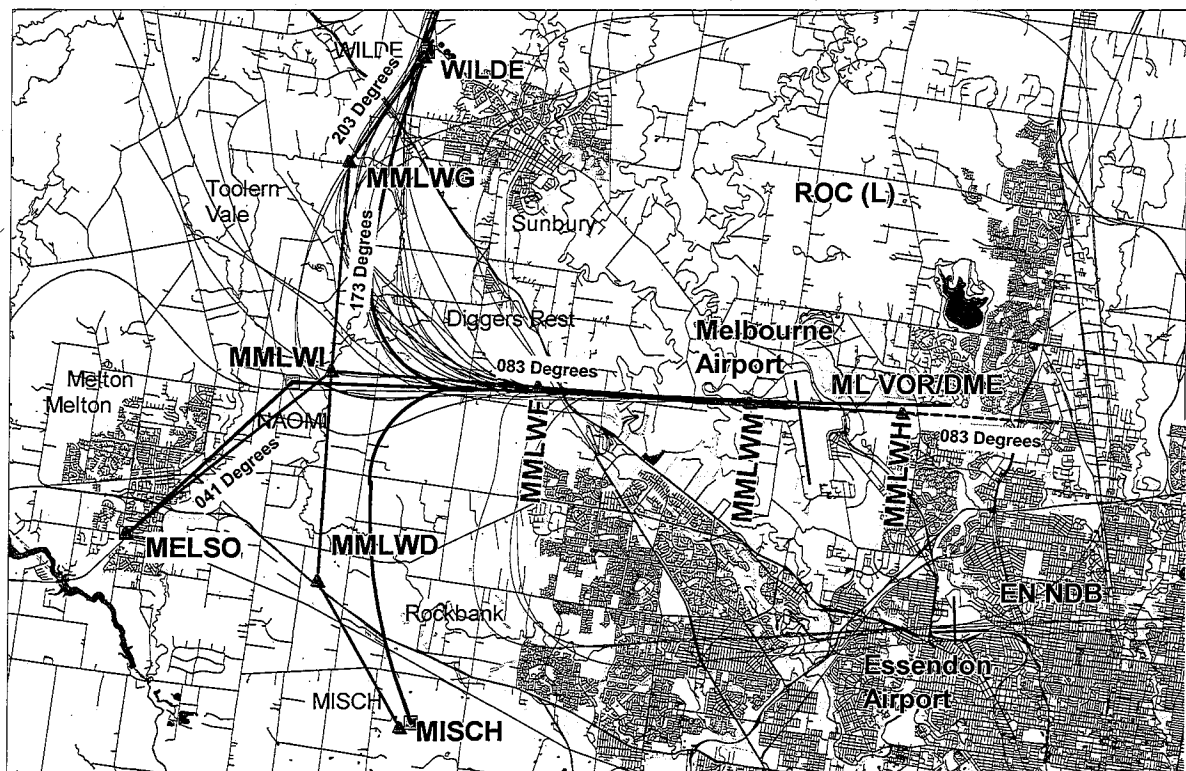
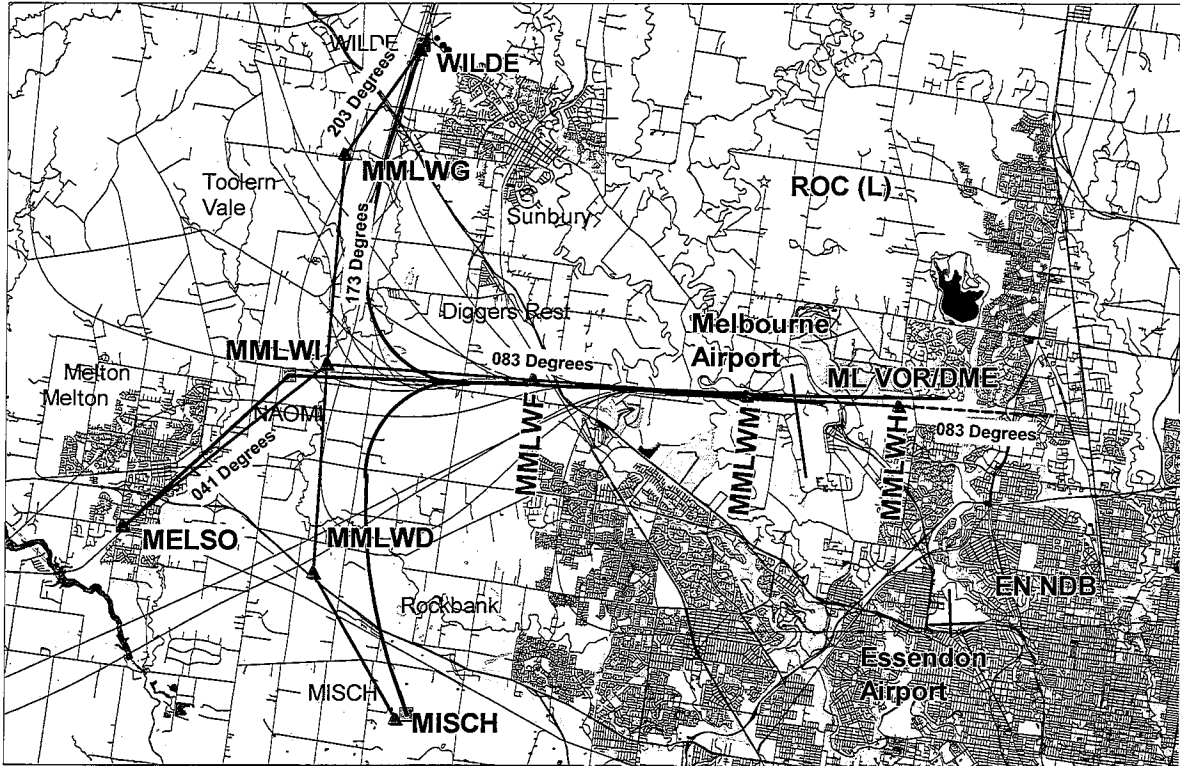




Figure 10



Analysis of both the 2003 and January 2005 flight tracks and the proposed GPS approach shows that –

- the aircraft tracking from WILDE waypoint to the VOR/DME approach are remaining west of Sunbury. The proposed GPS approach follows a similar path to the west of Sunbury.
- the aircraft tracking MISCH waypoint to the VOR/DME approach are remaining west of the Rockbank. The proposed GPS approach follows a similar path to the west of Rockbank.
- the aircraft tracking TEENA waypoint to the VOR/DME approach are flying over the south-eastern side of Melton. The proposed GPS approach follows a similar path over Melton.

The assessment of the aircraft using the current Runway 09 VOR/DME procedure shows that the majority of flights were RPT jet aircraft and turbo-prop aircraft. Melbourne aerodrome is the major aerodrome for large aircraft and RPT operations in the area. As there is no foreseeable reason for this to change, it is anticipated that there will be no change in the type of operations using the Runway 09 GPS approach.



While the proposed RNAV (GNSS) approach for Runway 09 may result in some perceptible change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed RNAV (GNSS) approach to Runway 09 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

7 ARBEY STAR RUNWAY 34 – AMENDED PROCEDURE

The ARBEY Star is used by aircraft approaching Melbourne from the north. Aircraft using this Star will be arriving from Adelaide, Perth, Alice Springs, Darwin, Brisbane, Coolangatta, Cairns and South-east Asian ports.

The proposed amendment to the ARBEY Star for Runway 34 commences at BUNKY waypoint and tracks to LAVER waypoint and then to the amended Runway 34 VOR and RNAV approaches. Figure 11 depicts the current track in green and the proposed track in red.

Figure 11

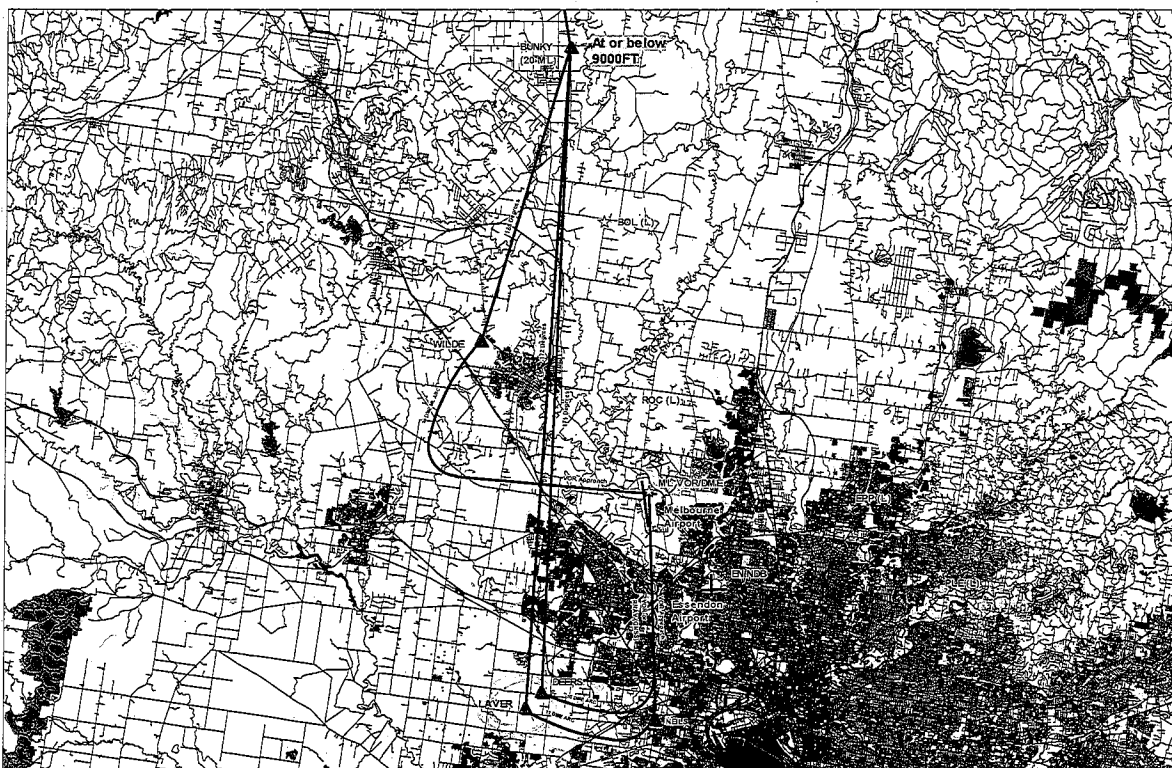


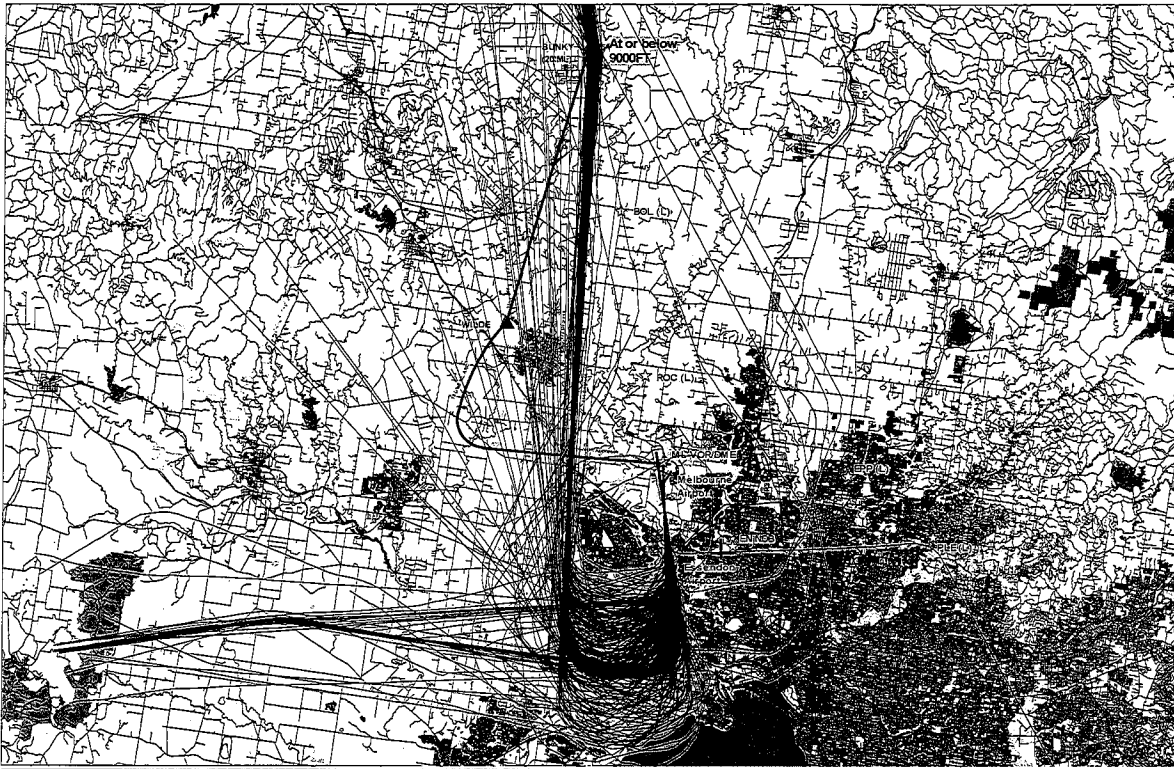
Figure 12 shows the flight paths of aircraft using the ARBEY Star for Melbourne Runway 34 during the month of January 2005.

Figure 12 shows that there is considerable variation in actual tracks over the ground by aircraft using the current ARBEY Star. It is expected that there will be a similar range exhibited by aircraft following the introduction of the new ARBEY Star.

Numbers of aircraft using the ARBEY Star will not be affected, and their altitudes on descent will not change significantly.

may see what they track !!

Figure 12



While the proposed ARBEY Star for Runway 34 may result in some perceptible change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed amended ARBEY Star to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

8 ARBEY STAR RUNWAY 09 – AMENDED PROCEDURE

The ARBEY Star for Runway 09 has been amended to indicate that the aircraft can complete the current VOR approach or the proposed RNAV / GNSS approach.



9 DYTES STAR RUNWAY 34 – NEW PROCEDURE

The DYTES Star will be used by aircraft approaching Melbourne from the north-east and east. Aircraft using this Star will be arriving from Sydney, Canberra and New Zealand.

The proposed DYTES Star for Runway 34 commences at DYTES waypoint and tracks to BOLTY waypoint and then to the amended Runway 34 VOR and RNAV approaches. Figure 13 depicts the current track in green and the proposed track in red.

Figure 13



Figure 14 show the flight paths of aircraft approaching for Melbourne Runway 34 from the designated ports during the month of January 2005.



Figure 14



Figure 14 shows that no aircraft flew in the area of the proposed track between DYTRES and BOLTY waypoints in January 2005. It is assessed that the residents of the area under the proposed track will be impacted by aircraft flying the proposed DYTRES Star.

Figure 14 shows that there is considerable variation in actual tracks over the ground by aircraft arriving from the north-east and east using the DYTRES Star. It is expected that there will be a similar range exhibited by aircraft following the introduction of the new DYTRES Star.

It is assessed that the proposed amended DYTRES Star to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

what a waste!!

[Handwritten scribble]

*what variation! - all
0800 case
- for Melb. will be
united to us*

no consultation!!



10 HOBAY FIVE STAR RUNWAY 34 – AMENDED PROCEDURE

The HOBAY Star is will by jet aircraft approaching Melbourne from the north-east. Aircraft using this Star will be arriving from Hobart, Launceston and New Zealand.

The proposed amended HOBAY Star for Runway 34 commences at HOBAY waypoint and tracks to DOCKS and TONAR waypoints and then to the amended Runway 34 VOR and RNAV approaches. Figure 15 depicts the current track in green and the proposed track in red.

Figure 15

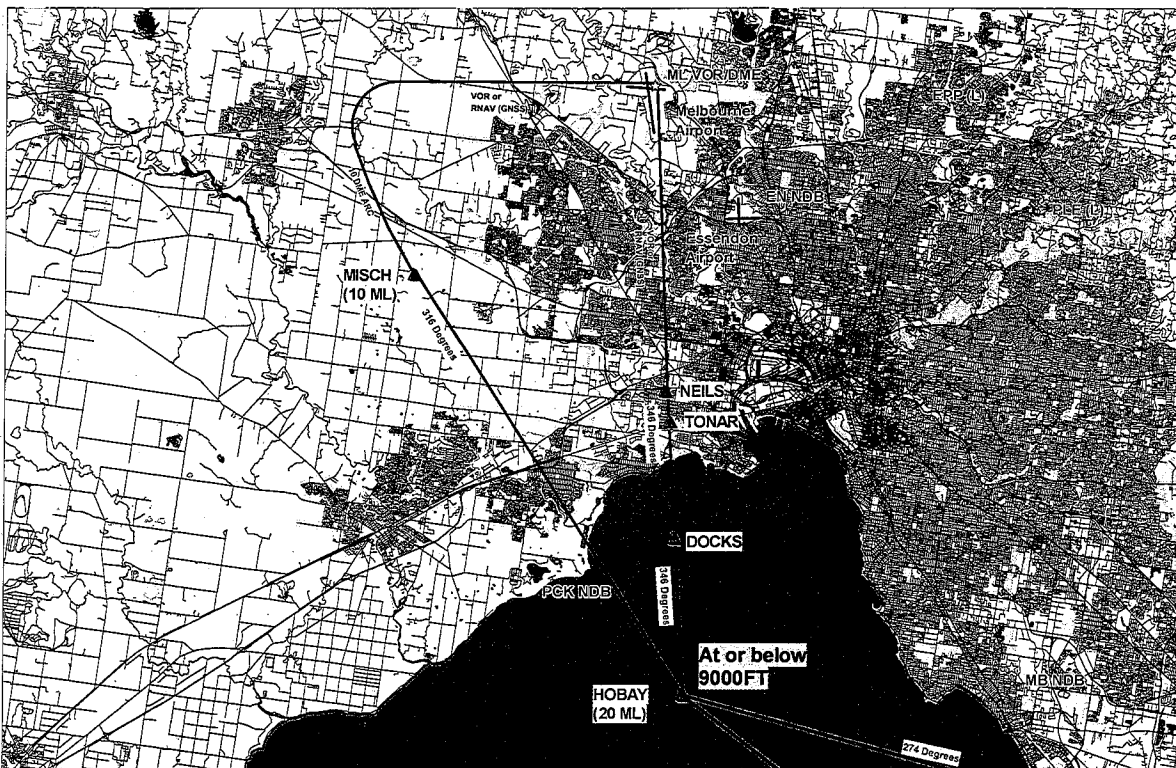


Figure 16 shows the flight paths of aircraft using the HOBAY Star for Melbourne Runway 34 during the month of January 2005.

Figure 16 shows that there is considerable variation in actual tracks over the ground by aircraft using the current HOBAY Star. It is expected that there will be a similar range exhibited by aircraft following the introduction of the new HOBAY Star.

Numbers of aircraft using the HOBAY Star will not be affected, and their altitudes on descent will not change significantly.

what variation!
H.S. like a broken record!

Figure 16



While the proposed HOBAY Star for Runway 34 may result in some perceptible change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed amended HOBAY Star to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

11 HOBAY STAR RUNWAY 09 – AMENDED PROCEDURE

The HOBAY Star has been amended to indicate that the aircraft can complete the current VOR approach or the RNAV / GNSS approach.



12 MICHM STAR RUNWAY 34 – AMENDED PROCEDURE

The MICHM Star is will by aircraft approaching Melbourne from the south and south-east. Aircraft using this Star will be arriving from Hobart, Launceston and New Zealand.

The proposed amended MICHM Star for Runway 34 commences at MICHM waypoint and tracks to BOLTY waypoint and then to the amended Runway 34 VOR and RNAV approaches. Figure 17 depicts the current track in green and the proposed track in red.

Figure 17

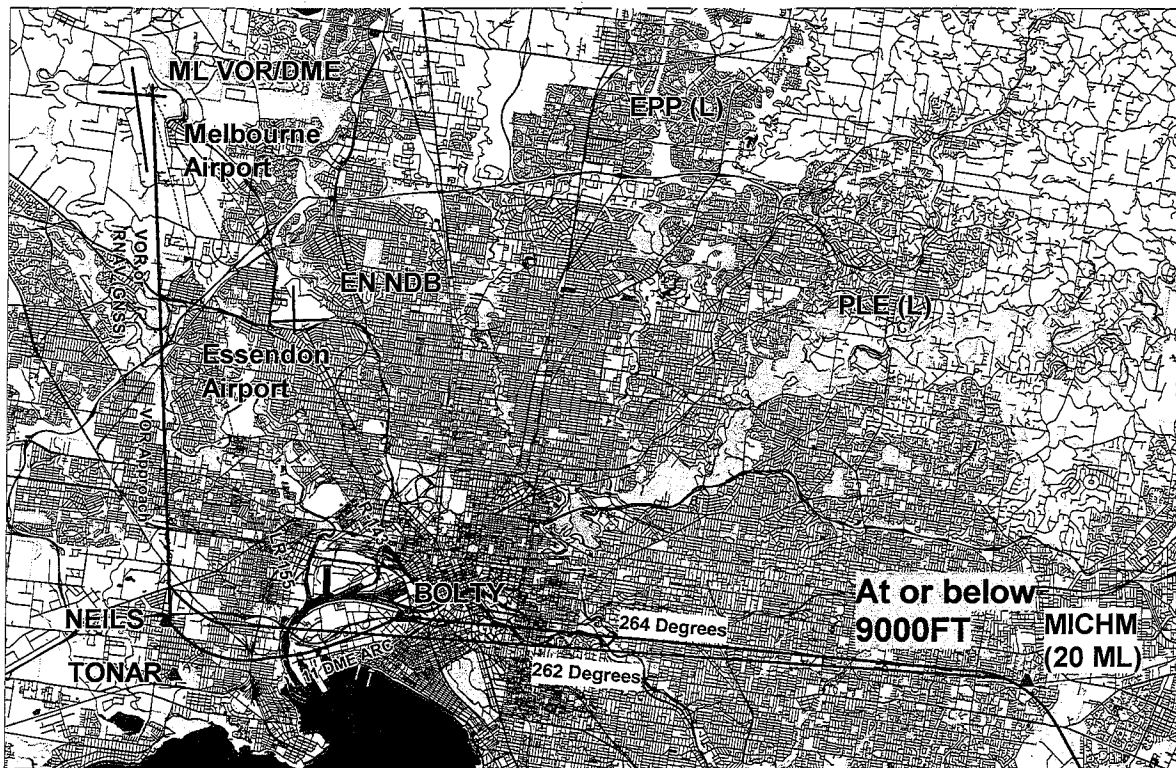


Figure 18 shows the flight paths of aircraft using the MICHM Star for Melbourne Runway 34 during the month of January 2005.



Figure 18



Figure 18 shows that no aircraft flew in the area of the proposed track between MICHM and BOLTY waypoints in January 2005. It is noted that the proposed track MICHM to BOLTY is very close to the current track. It is assessed that some residents may notice the slight change in the flight path.

Figure 18 shows that there is considerable variation in actual tracks over the ground by aircraft using the current MICHM Star. It is expected that there will be a similar range exhibited by aircraft following the introduction of the amended MICHM Star.

Numbers of aircraft using the MICHM Star will not be affected, and their altitudes on descent will not change significantly.

While the proposed MICHM Star for Runway 34 may result in some perceptible change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed amended MICHM Star to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

13 WENDY STAR RUNWAY 34 – AMENDED PROCEDURE

The WENDY Star is will by jet aircraft approaching Melbourne from the south-west. Aircraft using this Star will be arriving from Perth, Adelaide and South Africa.

The proposed amended WENDY Star for Runway 34 commences at TEENA waypoint and tracks to LAVER waypoint and then to the amended Runway 34 VOR and RNAV approaches. Figure 19 depicts the current track in green and the proposed track in red

Figure 19

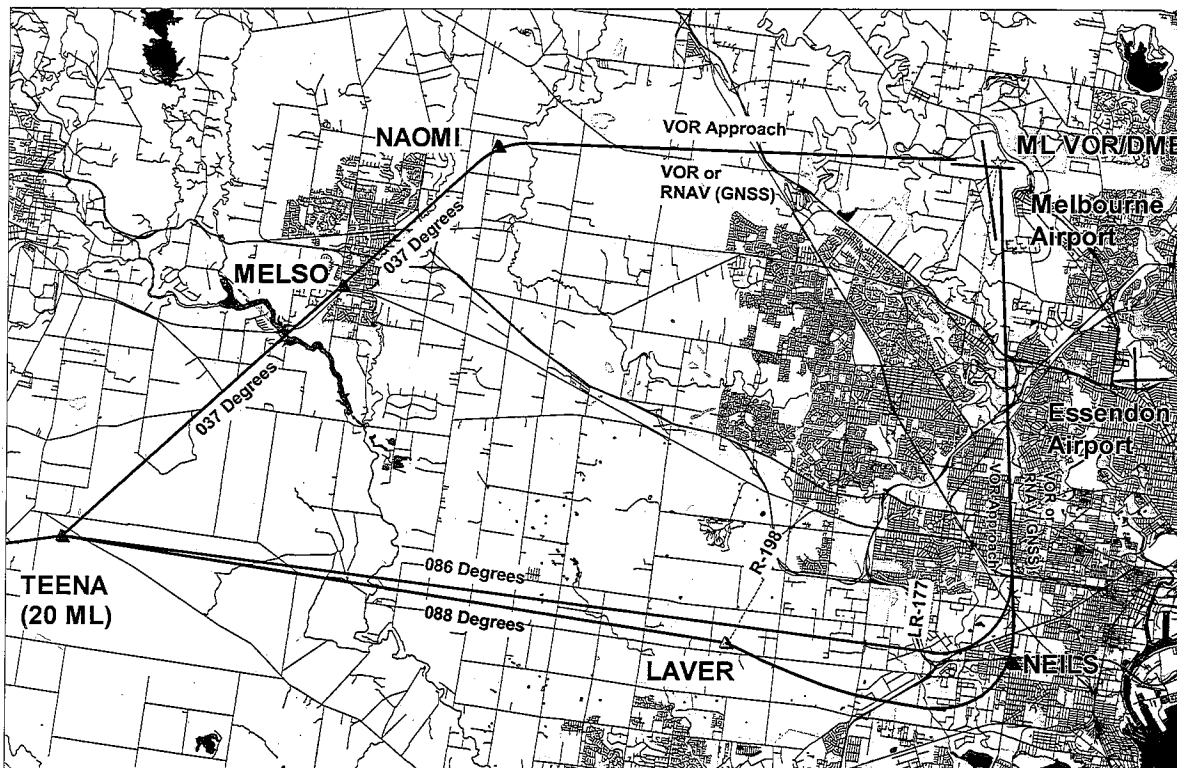
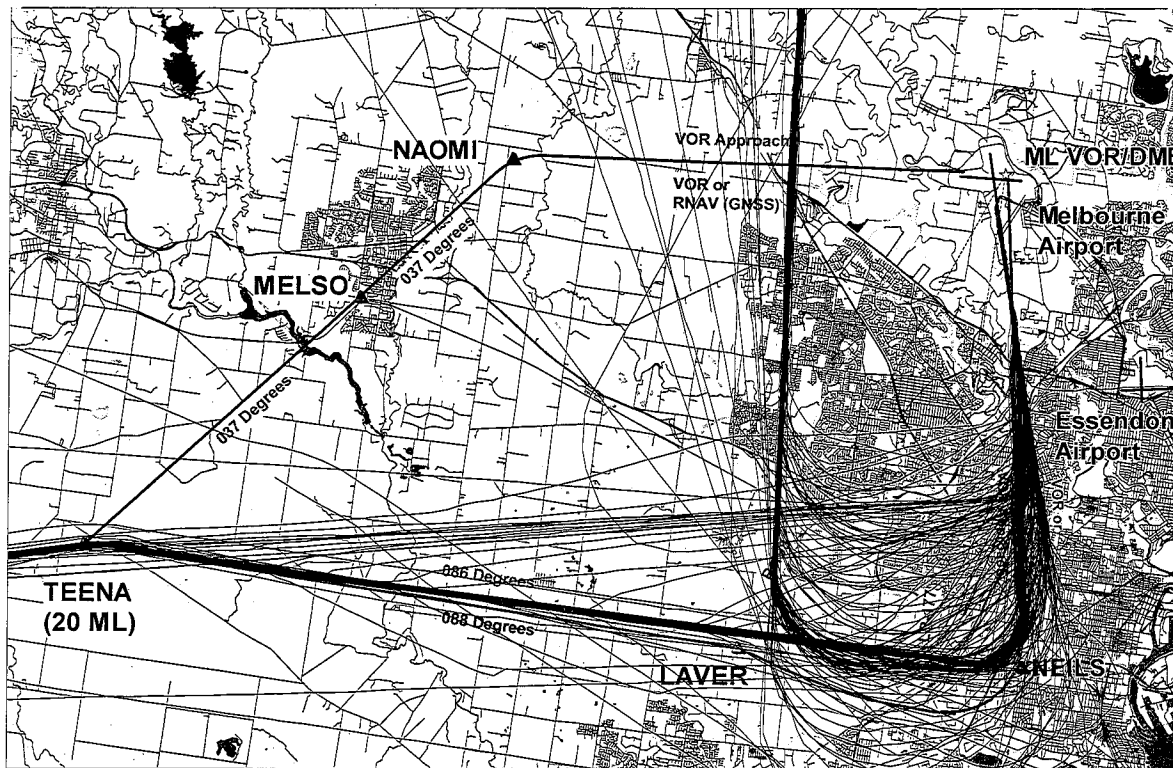


Figure 20 shows the flight paths of aircraft using the WENDY Star for Melbourne Runway 34 during the month of January 2005.

Figure 20 shows that there is considerable variation in actual tracks over the ground by aircraft using the current WENDY Star. It is expected that there will be a similar range exhibited by aircraft following the introduction of the amended WENDY Star.

Numbers of aircraft using the WENDY Star will not be affected, and their altitudes on descent will not change significantly.

Figure 20


While the proposed WENDY Star for Runway 34 may result in some perceptible change to flight paths, the new procedure has been designed to have the least impact while still satisfying the required safety criteria.

It is assessed that the proposed amended WENDY Star to Runway 34 is in accordance with Airservices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise.

14 WENDY STAR RUNWAY 09 – AMENDED PROCEDURE

The WENDY Star has been amended to indicate that the aircraft can complete the current VOR approach or the proposed RNAV / GNSS approach.



15 FINDINGS

This assessment concludes that the amendments to the following procedures can be supported on environmental grounds –

- Amended VOR Approach to Runway 34
- Amended RNAV (GNSS) to Runway 34
- Proposed RNAV (GNSS) to Runway 09
- Amended ARBEY Star to Runway 09
- Amended ARBEY Star to Runway 34
- Proposed DYTES Star to Runway 34
- Amended HOBAY Star to Runway 09
- Amended HOBAY Star to Runway 34
- Amended MICHM Star to Runway 34
- Amended WENDY Star to Runway 09
- Amended WENDY Star to Runway 34

16 RECOMMENDATIONS

That the following procedures be implemented –

- Amended VOR Approach to Runway 34
- Amended RNAV (GNSS) to Runway 34
- Proposed RNAV (GNSS) to Runway 09
- Amended ARBEY Star to Runway 09
- Amended ARBEY Star to Runway 34
- Proposed DYTES Star to Runway 34
- Amended HOBAY Star to Runway 09
- Amended HOBAY Star to Runway 34
- Amended MICHM Star to Runway 34
- Amended WENDY Star to Runway 09
- Amended WENDY Star to Runway 34

17 ATTACHMENTS

ESB assessment documentation
ARMS 143652, 143661, 147584 and 150045